1256

DETECTION OF APPENDIX IX COMPOUNDS IN MONITORING WELLS

07/13/90

DOE-1430-90
DOE-FMPC/OEPA
2
LETTER

[redacted]

1256

Department of Energy
FMPC Site Office
P.O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 738-6319

July 13, 1990
DOE-1430-90

Mr. Tom Winston, District Chief
Ohio Environmental Protection Agency
Southwest District Office
40 S. Main St.
Dayton, OH 45402

Dear Mr. Winston:

DETECTION OF APPENDIX IX COMPOUNDS IN MONITORING WELLS

Enclosed is a report on groundwater monitoring data from well 1031, in the Waste Pit Area at the FMPC. The report explains that in three rounds of sampling data, (August 1989, November 1989, and February 1990), detectable quantities of six compounds listed at 40 CFR 264 APPENDIX IX have been detected in the groundwater samples from well 1031.

In accordance with the FMPCs Groundwater Quality Assessment Plan, we are preparing a proposal to further investigate the extent and rate of migration of the compounds detected, and to determine the affected area. We will provide you with a proposal on or before October 1, 1990.

If you or your staff has any questions, please contact David Rast, of my staff, at (513) 738-6322.

Sincerely,

Gerald W. Westerbeck
FMPC Site Manager

DP-84:Rast

Enclosure: As stated

cc w/encl.:

P. Pardi, OEPA-Dayton
R. Bendula, OEPA-Dayton
G. E. Mitchell, OEPA-Dayton
C. A. McCord, USEPA-5

1256

cc w/o encl.:

E. D. Savage, WMCO
J. E. Harmon, WMCO

Well 1031 Report
May 14, 1990

Well 1031 was installed in March, 1988 under the CERCLA RI/FS Program and is between the Clearwell and Waste Pit 1 as shown in Figure 1. This well is designed to monitor groundwater in the till, and is screened at a depth of 26.5 ft. below ground surface (BGS), (550.5′ above mean sea level)(amsl). The water level of the well is typically 25 ft. BGS (552′ amsl), so the well screen is in the top foot or two of the groundwater. Well 1031 has less than 10 gallons of purge water when sampled. The boring log (see appendix) for well 1031 indicates that the interface between the till material and the sand and gravel aquifer is 29 ft. BGS or 2.5 ft. below the total depth of well 1031.

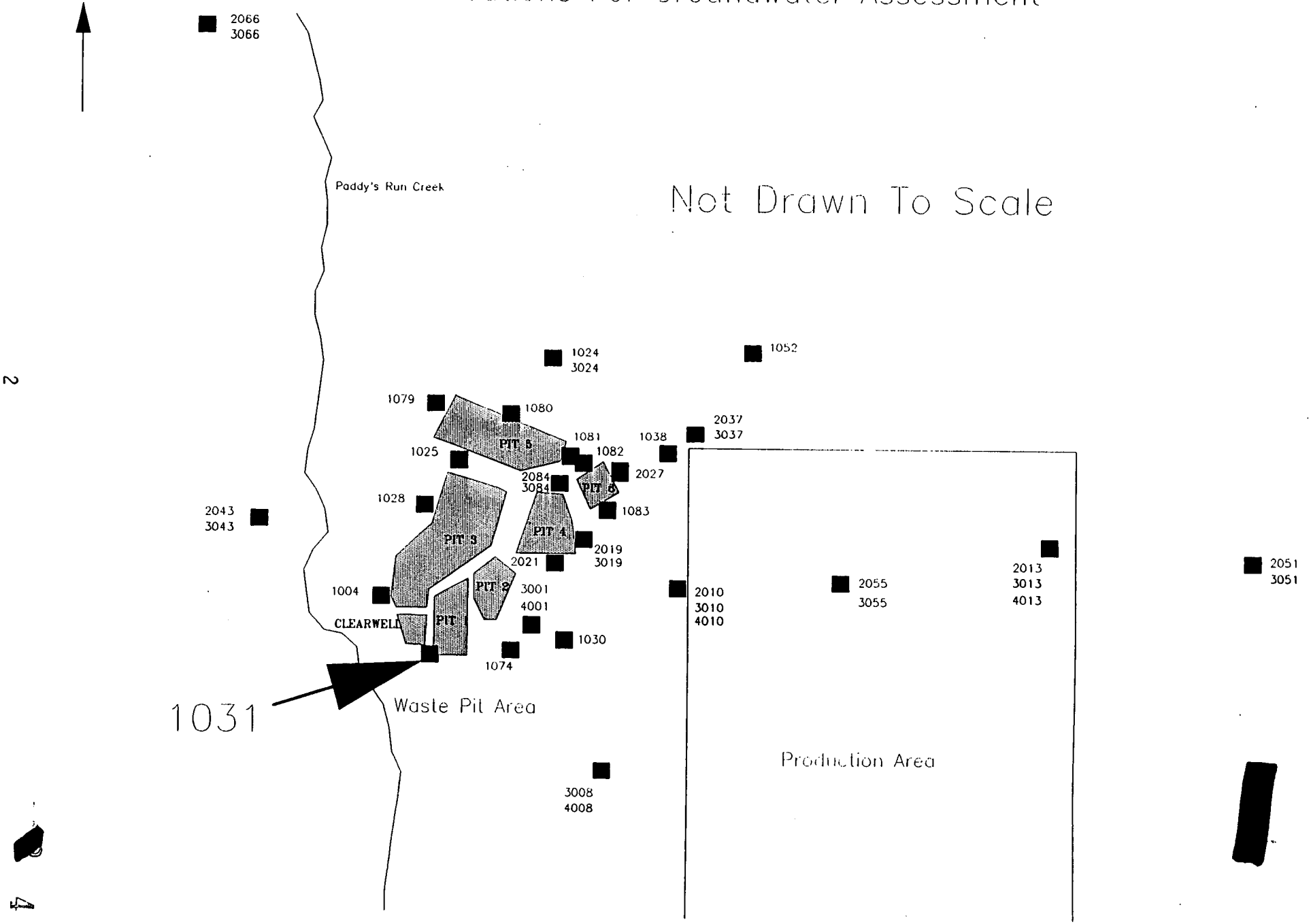
The RCRA Part B Permit Application, vol. 4 of 11, page E-22 defines the uppermost aquifer as the sand and gravel zone below the Feed Materials Production Center (FMPC). The till zone by definition is a shallow clay/silt formation; yield in this formation can vary extensively. Current knowledge does not allow precise predictions of groundwater movement in the glacial till. Natural lithologic variations within the till interfere with lateral flows. Artificial wells, ponds, pits and drain like systems complicate the flow picture even further.

Monitoring of well 1031 began in November of 1988, but volatile organic compounds were not monitored for until June, 1989, when the revised Groundwater Quality Assessment Program Plan (GQAPP) was implemented. An insufficient amount of water could be drawn from the well in June, 1989 so the first sample analyzed for volatile organics was August, 1989. The revised GQAPP called for the analysis

Figure 1

Well 1031 Report

RCRA Well Locations For Groundwater Assessment



1256

of six hazardous waste constituents. The six hazardous wastes constituents were chosen because they had documented uses on site or they were determined to be significant from a Hazardous Substances List sampling round completed under the RI/FS program. The six hazardous waste constituents are listed in Table 1.

Well 1031 has indicated statistically significant concentrations of five site specific parameters (calcium, chloride, fluoride, nitrates, and sodium) since August, 1989. This statistical significance was determined on May 7, 1990 when a full assessment of groundwater data was completed by WMCO. The EPA was notified of this in the Groundwater Quality Assessment Program Progress Report sent in May, 1990.

In addition to the site specific parameters noted above, indicator parameters sampled in well 1031 have shown a statistically significantly difference when compared to background. These indicator parameters are conductivity, pH, and total organic halides. Total Organic Halides (TOX) is an indicator parameter that is used to determine if organic constituents exist in the groundwater. The results of this statistical assessment were also provided in the Groundwater Quality Assessment Program Progress Report. The values of these indicators for round 6 are listed in the appendix to this report. Background Total Organic Carbon (TOC) and TOX is non-detectable.

Well 1031 Report
May 14, 1990

Table 1

Hazardous Wastes Constituents Found In Well 1031
(Concentrations in ug/L)

Constituent	August, 1989	November, 1989	February, 1990
1,1-Dichloroethane	30	45.0	37.2
2-Propanone	15	<12.5	78
Methylene Chloride	6B	<12.5	5
Tetrachloroethane	300E	248.0	126
Toluene	2J	<12.5	1.5
Trichloroethene	530E	527.0	214

< - Indicates that the value was non-detectable, or below the detection limit of the detector. These parameters indicate non-detectable because the sample was diluted to determine the peak values of Trichloroethene and Tetrachlorethane.

B - Analyte was found in the associated blank as well as the sample

E - This flag identifies a compound whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. For more details see explanation of organic qualifiers in appendix.

J - Indicates an estimated value, see appendix for more details.

Well 1031 Report
May 14, 1990

The presence of the six volatile organic compounds in well 1031 could not be determined earlier because more then one sample round was necessary to determine the validity of the data. The results of this sampling have been forwarded to your agency with the RI/FS database transmission. Table 1 provides a list of the volatile organic compounds and the concentrations at which they were detected in well 1031 since August of 1989. The appendix to this report includes a copy of the analytical reports that were received from the laboratory. Included in the round 6 report is the blank sample used for quality assurance by the laboratory.

Further work will be proposed to determine the rate and extent of migration of these constituents and determine any effects on the sand and gravel aquifer.

[redacted]

Well 1031 Report
May 14, 1990

Appendix

Boring Log
Analytical Reports

[redacted]

FERNALD RI/FS

6/15/89

12564 [redacted] RKA 2,

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 602	PROJECT NAME: FMPC RI/FS T 3.2		
BORING NUMBER: 13+1031 80'-5"	COORDINATES:	DATE: 4-5-88	
ELEVATION:	GWL: Depth / Date/Time	DATE STARTED 04/05/88	
ENGINEER/GEOLOGIST M. Goldberg	Depth / Date/Time	DATE COMPLETED 4-7-88	
DRILLING METHODS: Cable Tool		PAGE 1 OF 2	

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
							04/05/88
1	08832	3 9 13	10"	Hard very dark grayish Brown clay (10YR 3/2) DRY	CL	>4	Hnu = 0 ∝ = 0 βB = 260 0915
2	08833	6 6 8	12"	Hard Dark Brown clay (10YR 4/3) DRY.	CL	74	Hnu = 0 ∝ = 0 βB = 260 0920
3							
4	08834	21 10 11	12"	Very STIFF Dark Brown clay (10YR 4/3) DRY	CL	74	Hnu = 0 ∝ = 0 βB = 200 0925
5	08835	9 11 7	10"				Hnu = 0 ∝ = 0
				5.5 Ft			
6				Medium STIFF gray clay (5Y 6/1) moist Trace gravel	CL	<1	βB = 200 0930
7	08836	8 11 7	10	Medium STIFF Dark Brown clay (10YR 4/3) moist.	CL	<1	Hnu = 0 ∝ = 0 βB = 220 0935
				7.5			
8	08837	9 11 12	12"	Medium STIFF gray clay (5Y 5/1) DRY trace gravel	CL	<1	Hnu = 0 ∝ = 0 βB = 210 0937 High Plasticity
9				← Shelby Tube			
				9.5			
10	08838	16 11 13	18	Medium STIFF Yellowish Brown clay (10YR 5/8) MOIST. trace gravel	CL	<1	Hnu = 0 ∝ = 0 βB = 210 High Plasticity Shelby #00 8839 0940
				10.5			
11	08840	4 5 9	18"	Medium STIFF olive gray clay (5Y 4/2) DRY Trace gravel	CL	<1	Hnu = 0 ∝ = 0 βB = 210 1400
12							
13	08841	5 7 11	18"				Hnu = 0 ∝ = 0
				13 Ft			
				Medium STIFF very Dark gray (2.5Y 3/0) Trace gravel 13.5 Ft	Cl	<1	βB = 210 KJC
14	08842	7.5 12	10'	Medium STIFF olive gray clay (5Y 4/2)	Cl	<1	Hnu = 0 ∝ = 0
15				DRY Trace Gravel			βB = 210 1415

NOTES:

I) Drilling Contractor: Pennsylvania Drilling Co.
Driller: Tim Harris
Helper: Craig Coulter

II) Background Measurements
A) HNU = 0 B) ∝ = 0 c) βB = 460 cpm
04/05/88

III) Water used =

IV Color Via Munsell Color Chart

9

FERNALD
RI/FS

1256

[redacted] KFA 2/4

VISUAL CLASSIFICATION OF SOILS

PROJECT NUMBER: 502	PROJECT NAME: FMPC RI/FS T 3.2		
BORING NUMBER: 88 1031 ~~+31~~	COORDINATES:	DATE: 4-6-88	
ELEVATION:	GWL: Depth / Date/Time	DATE STARTED: 04 05 88	
ENGINEER/GEOLOGIST: M. Goldberg	Depth / Date/Time	DATE COMPLETED: 4-7-88	
DRILLING METHODS: Cable Tool		PAGE: 2 OF 2	

DEPTH	SAMPLE TYPE & NO	BLOWS ON SAMPLER PER	RECOVERY	DESCRIPTION	USCS SYMBOL	MEASURED CONSISTENCY (TSF)	REMARKS
15							
16	088043	4 5 11	18	Medium STIFF Dark gray clay (5Y 4/1) DRY Trace gravel	CL	<1	Hnu = 0 cc = 0 SB = 200 1500
17	088044	4 10 10	16"	Medium STIFF Dark gray clay (5Y 4/1) DRY Trace gravel	CL	<1	Hnu = 0 α = 0 SB = 200 1510
18							
19	088045	N/A	18"	SHelby Tube	N/A	N/A	Pushed 2.5Ft Recovered 1.5Ft 1645
20	088046	2 2 2	8"	Medium STIFF Yellowish Brown clay (10YR 5/6) Trace gravel	CL	<1	Hnu = 0 04/07/88 α = 0 SB = 200 0930
21							
22	088047	5 4 7	10"	STIFF Dark Yellowish Brown clay (10YR 4/6) Trace gravel, DRY	CL	1.5	Hnu = 0 α = 0 SB = 240 0940
23	088048	16 13 14	6"	STIFF Dark Yellowish Brown clay (10YR 5/6) trace gravel. Trace gray clay (5Y 5/1)	CL	1.5	Hnu = 0 α = 0 SB = 240 0955
24				24Ft			
25	088049	15 22 53/3	18"	Very Dense Dark Brown sandy SILT (10YR 4/3) DRY. NO clay	SM	4.0	Hnu = 0 α = 0 SB = 240 1040
26				26Ft			
27	088050	14 32 36	18"	Very Hard Yellowish Brown clay and SILT (10YR 5/8) DRY Trace gravel	CL	40	Hnu = 0 α = 0 SB = 240 1055
28	088051	16 22 37	18"	Very Hard grayish Brown clay (2.5Y 5/2) Dry. Trace gravel	CL	>40	Hnu = 0 α = 0 SB = 240 1300
29				29Ft			
30	088052	20 22 17	18"	Dense yellowish Brown Sand (10YR 5/8) Dry.	SW	<1	Hnu = 0 α = 0 SB = 200 1315
NOTES				Bottom of Boring 90Ft			

[redacted]

N/A = NOT Applicable

Well 1031 Report
May 14, 1990

Round 6, August, 1989

Description Of Sample Numbers And Qualifiers

Sample ID QXM09B909201 - Blank sample analyzed parallel to sample 66596

Sample ID 66562 - Not significant to well 1031

Sample ID 66596 - Well 1031 sample

Sample ID 66597 - Not significant to well 1031

Sample ID QXO01B909131 - Blank sample analyzed parallel to sample 66557

Sample ID 66532 - Not significant to well 1031

Sample ID 66557 - Well 1031 sample

Sample ID 66558 - Not significant to well 1031

Sample ID QXW04B909121 - Blank sample analyzed parallel to sample 66557

Sample ID QXW04B909131 - Not significant to well 1031

[redacted]

EDT SUFFIX CODES FOR "LAB SAMPLE" AND "CLIENT SAMPLE" NUMBERS

MS	Matrix Spike (sample spiked before prep)
MSD	Matrix Spike Duplicate (duplicate prep/analysis of spiked sample)
D	Duplicate (duplicate prep/analysis of a sample--could also have a D1, D2, etc.)
S	Spike (spiked before prep)
SD	Spike Duplicate (duplicate prep/analysis of a spiked sample)
S1	Original Spike (same as S--only used if there is an S2)
S2	Post Digestion Spike (original sample spiked after prep)
R	Reprepped (could be combined with other suffix codes, i.e. RMS, RD or could also have a R1, R2, etc.)
A	Replicate Analysis (additional analysis of original prepped sample--could also have a A1, A2, etc.)
U	Unfiltered Sample (unfiltered sample prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. UMS, UMSD, UD, etc.)
F	Filtered Sample (sample filtered before prep/analysis--used when client sample number is the same for both unfiltered and filtered samples--could be combined with other suffix codes, i.e. FMS, FMSD, FD, etc.)
BK	Back sorbent section of sampler tube
FR	Front sorbent section of sampler tube
DL	Dilution (original sample diluted for analysis)

edt1.jes

[redacted]

Table EDT-4

EPA CLP ORGANIC QUALIFIERS/RECOVERY FLAGS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and reanalyzed. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

X - Estimated value due to a confirmed compound which is off-scale in both columns.

Y - Indistinguishable isomer in tentatively identified compounds.

Z - No estimated value reported, or an elevated CRQL reported because matrix effects interfere with or obscure the compound on one or both columns. In either situation, the compound does not confirm as a positive identification.

* - Values outside of contract required QC limits.

[redacted]

Advanced Sciences, Inc.
Date: 27-OCT-89

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ITNT35605

EPA CLP TCL Volatile Organics by GCMS - Current EPA CLP Protocol - MV 702

Client Sample ID: QXM09B909201

Sample Date: N/A
IT Sample ID: XVB0920
Prep Date:
Analysis Date: (Completed) 09/20/89
Blank Sample ID: QXM09B909201
Concentration Units: UG/LITER

Parameter	Result	
Methylene chloride	2	J
Acetone	10	U
1,1-Dichloroethane	5	U
Trichloroethene	5	U
Tetrachlorethene	5	U
Toluene	5	U

[redacted]

Advanced Sciences, Inc.
Date: 27-OCT-89

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ITNT35605

EPA CLP TCL Volatile Organics by GCMS - Current EPA CLP Protocol - MV 702

Client Sample ID: 66562

Sample Date: N/A
IT Sample ID: JJ5954
Prep Date:
Analysis Date: (Completed) 09/20/89
Blank Sample ID: QXM09B909201
Concentration Units: UG/LITER

Parameter	Result	
Methylene chloride	5	U
Acetone	2	J
1,1-Dichloroethane	5	U
Trichloroethene	5	U
Tetrachlorethene	5	U
Toluene	5	U

Client Sample ID: 66596

Sample Date: N/A
IT Sample ID: JJ5955
Prep Date:
Analysis Date: (Completed) 09/20/89
Blank Sample ID: QXM09B909201
Concentration Units: UG/LITER

Parameter	Result	
Methylene chloride	6	B
Acetone	15	
1,1-Dichloroethane	30	
Trichloroethene	530	E
Tetrachlorethene	300	E
Toluene	2	J

[redacted]

Advanced Sciences, Inc.
Date: 27-OCT-89

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ITNT35605

EPA CLP TCL Volatile Organics by GCMS - Current EPA CLP Protocol - MV 702

Client Sample ID: 66596DL

Sample Date: N/A
IT Sample ID: JJ5955D
Prep Date:
Analysis Date: (Completed) 09/20/89
Blank Sample ID: QXM09B909201
Concentration Units: UG/LITER

Parameter	Result	
Methylene chloride	28	BDJ
Acetone	29	DJ
1,1-Dichloroethane	26	DJ
Trichloroethene	520	D
Tetrachlorethene	290	D
Toluene	50	U

Client Sample ID: 66597

Sample Date: N/A
IT Sample ID: JJ5956
Prep Date:
Analysis Date: (Completed) 09/20/89
Blank Sample ID: QXM09B909201
Concentration Units: UG/LITER

Parameter	Result	
Methylene chloride	5	U
Acetone	10	U
1,1-Dichloroethane	5	U
Trichloroethene	5	U
Tetrachlorethene	5	U
Toluene	5	U

[redacted]

[redacted]

Advanced Sciences, Inc.
Date: 27-OCT-89

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ITNT35605

Total Organic Carbon - EPA 415.1 - OM 001

Client Sample ID: QXO01B909131

Sample Date: N/A
IT Sample ID: 01B909131
Prep Date: 09/13/89
Analysis Date: (Completed) 09/13/89
Blank Sample ID: QXO01B909131
Concentration Units: MG/LITER

Parameter	Result	
Total Organic Carbon	1	U

Client Sample ID: 66532

Sample Date: N/A
IT Sample ID: MM0009
Prep Date: 09/13/89
Analysis Date: (Completed) 09/13/89
Blank Sample ID: QXO01B909131
Concentration Units: MG/LITER

Parameter	Result	
Total Organic Carbon	1	U

Client Sample ID: 66557

Sample Date: N/A
IT Sample ID: MM0010
Prep Date: 09/13/89
Analysis Date: (Completed) 09/13/89
Blank Sample ID: QXO01B909131
Concentration Units: MG/LITER

Parameter	Result
Total Organic Carbon	11.1

[redacted]

Advanced Sciences, Inc.
Date: 27-OCT-89

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ITNT35605

Total Organic Carbon - EPA 415.1 - OM 001

Client Sample ID: 66557MS

Sample Date: N/A
IT Sample ID: MM0010MS
Prep Date: 09/13/89
Analysis Date: (Completed) 09/13/89
Blank Sample ID: QXO01B909131
Concentration Units: % RECOVERY

Parameter	Result
Total Organic Carbon	94

Client Sample ID: 66557MSD

Sample Date: N/A
IT Sample ID: MM0010MSD
Prep Date: 09/13/89
Analysis Date: (Completed) 09/13/89
Blank Sample ID: QXO01B909131
Concentration Units: % RECOVERY

Parameter	Result
Total Organic Carbon	100

Client Sample ID: 66558

Sample Date: N/A
IT Sample ID: MM0011
Prep Date: 09/13/89
Analysis Date: (Completed) 09/13/89
Blank Sample ID: QXO01B909131
Concentration Units: MG/LITER

Parameter	Result
Total Organic Carbon	1.81

Advanced Sciences, Inc.
Date: 27-OCT-89

IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ITNT35605

Total Organic Halides - EPA 450.1/SW846 9020 - OM 004

Client Sample ID: QXW04B909121

Sample Date: N/A
IT Sample ID: 04B909121
Prep Date: 09/12/89
Analysis Date: (Completed) 09/12/89
Blank Sample ID: QXW04B909121
Concentration Units: MG/LITER

Parameter	Result
Total Organic Halides	.01 U

Client Sample ID: QXW04B909131

Sample Date: N/A
IT Sample ID: 04B909131
Prep Date: 09/13/89
Analysis Date: (Completed) 09/13/89
Blank Sample ID: QXW04B909131
Concentration Units: MG/LITER

Parameter	Result
Total Organic Halides	.01 U

Client Sample ID: 66532

Sample Date: N/A
IT Sample ID: MM0009
Prep Date: 09/12/89
Analysis Date: (Completed) 09/12/89
Blank Sample ID: QXO04B909121
Concentration Units: MG/LITER

Parameter	Result
Total Organic Halides	.01 U

Advanced Sciences, Inc.
Date: 27-OCT-89

[redacted]
IT CORPORATION
KNOXVILLE, TN

Client Project ID: Fernald RI/FS

Job Number: ITNT35605

Total Organic Halides - EPA 450.1/SW846 9020 - OM 004

Client Sample ID: 66557

Sample Date: N/A
IT Sample ID: MM0010
Prep Date: 09/12/89
Analysis Date: (Completed) 09/12/89
Blank Sample ID: QXO04B909121
Concentration Units: MG/LITER

Parameter	Result
Total Organic Halides	.132

Client Sample ID: 66557MS

Sample Date: N/A
IT Sample ID: MM0010MS
Prep Date: 09/12/89
Analysis Date: (Completed) 09/12/89
Blank Sample ID: QXW04B909121
Concentration Units: % RECOVERY

Parameter	Result
Total Organic Halides	103

Client Sample ID: 66557MSD

Sample Date: N/A
IT Sample ID: MM0010MSD
Prep Date: 09/12/89
Analysis Date: (Completed) 09/12/89
Blank Sample ID: QXW04B909121
Concentration Units: % RECOVERY

Parameter	Result
Total Organic Halides	196

[redacted]

[redacted]

Well 1031 Report
May 14, 1990

Round 7, November, 1989

The following analytical report pertains to well 1031.

[redacted]

[redacted] 1256

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc.
Dayton Division
3601 South Dixie Drive
Dayton, OH 45439
Tel: (513) 294-6856
Fax: (513) 294-7816

Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

01-26-90

WESTINGHOUSE MATERIALS
COMPANY OF OHIO
P.O. Box 398704
Cincinnati OH 45239

PAGE 12

Sample No.: 623

Sample Description: #66665

Date Taken: 11-21-89 1520

Date Received: 11-22-89

VOLATILE COMPOUNDS

METHOD 8240

Acetone	<12.5	ug/L
1,1-Dichloroethane	45.0	ug/L
1,2-Dichloroethane	<12.5	ug/L
Methylene chloride	<12.5	ug/L
Tetrachloroethene	248.0	ug/L
Toluene	<12.5	ug/L
Trichloroethene	527.0	ug/L

Jackie Webster
Division Manager

[redacted]

[redacted]

Well 1031 Report
May 14, 1990

Round 8, February, 1990

The following analytical report pertains to well 1031.

[redacted]

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Midwest, Inc. [redacted]
Dayton Division
3601 South Dixie Drive
Dayton, OH 45439
Tel: (513) 294-6856
Fax: (513) 294-7816

Formerly: Howard Laboratories, Inc.

ANALYTICAL REPORT

William Hayes
WESTINGHOUSE MATERIALS
COMPANY OF OHIO
P.O. Box 398704
Cincinnati OH 45239

03-29-90

Sample No.: 19019

PAGE 4

Sample Description: #40049

Date Taken: 02-18-90 1145

Date Received: 02-20-90

VOLATILE COMPOUNDS

METHOD 8240

Acetone	78.	ug/L
1,1-Dichloroethane	37.2	ug/L
1,2-Dichloroethane	2.6	ug/L
Methylene chloride	5.	ug/L
Tetrachloroethene	126.	ug/L
Toluene	1.5	ug/L
Trichloroethene	214.	ug/L

John Andrejcio
Project Manager

[redacted]